

**WEST**

## Freeform Search

**Database:**

US Patents Full-Text Database  
US Pre-Grant Publication Full-Text Database  
JPO Abstracts Database  
EPO Abstracts Database  
Derwent World Patents Index  
IBM Technical Disclosure Bulletins

**Term:**

L2 and (winter adj wheat)

**Display:**

50

Documents in Display Format:

-

Starting with Number

1

**Generate:** ☐ Hit List ☒ Hit Count ☐ Side by Side ☐ Image

Search

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Cases

### Search History

**DATE:** Tuesday, May 21, 2002   [Printable Copy](#)   [Create Case](#)

Set Name  
side by side

Query

Hit Count   Set Name  
result set

*DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ*

<u>L3</u>	L2 and (winter adj wheat)	24	<u>L3</u>
<u>L2</u>	L1 and (wheat or rye or barley)	711	<u>L2</u>
<u>L1</u>	chitinase	1574	<u>L1</u>

END OF SEARCH HISTORY

=> d his

(FILE 'HOME' ENTERED AT 13:02:59 ON 21 MAY 2002)

INDEX 'ADISALERTS, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,  
BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO,  
CABA,  
CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,  
DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 13:03:05 ON  
21 MAY 2002

SEA CHITINASE

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3 FILE ADISALERTS  
1 FILE ADISINSIGHT  
1209 FILE AGRICOLA  
20 FILE ANABSTR  
236 FILE AQUASCI  
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3307 FILE BIOSIS  
820 FILE BIOTECHABS  
820 FILE BIOTECHDS  
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1927 FILE CABA  
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215 FILE CEABA-VTB  
4 FILE CEN  
22 FILE CIN  
102 FILE CONFSCI  
37 FILE CROPB  
419 FILE CROPU  
19 FILE DDFB  
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1095 FILE DGENE  
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138 FILE FEDRIP  
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93 FILE FROSTI  
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1339 FILE LIFESCI  
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1352 FILE MEDLINE  
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97 FILE OCEAN  
1513 FILE PASCAL  
2 FILE PHAR

37 FILE PHIN  
58 FILE FROMT  
2805 FILE SCISEARCH  
667 FILE TOXCENTER  
1037 FILE USPATFULL  
5 FILE USPAT2  
374 FILE WPIDS  
374 FILE WPINDEX

L1

QUE CHITINASE  
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FILE 'CAPLUS, BIOSIS, SCISEARCH, CABA, PASCAL, LIFESCI, MEDLINE,  
AGRICOLA' ENTERED AT 13:04:44 ON 21 MAY 2002

L2

0 S L1 AND (WHEAT-DERIVED)

L3

1196 S L1 AND (WHEAT OR BARLEY OR RYE)

L4

43 S L3 AND (WINTER(W)WHEAT OR SPRING(W)WHEAT)

L5

2 S L4 AND (CDNA OR CLONE)

L6

18 DUP REM L4 (25 DUPLICATES REMOVED)

L6 ANSWER 10 OF 18 CABA COPYRIGHT 2002 CABI

ACCESSION NUMBER: 1999:132139 CABA

DOCUMENT NUMBER: 990708839

TITLE: Induction of **chitinase** in rape and  
**wheat** by water-soluble chitosan

AUTHOR: Yu HanShou; Zhang YiMing; Chen YongXuan; Wu  
HanZhang; Yu, H. S.; Zhang, Y. M.; Chen, Y. X.; Wu,  
H. Z.

CORPORATE SOURCE: Department of Microbiology, College of Natural  
Resources and Environmental Sciences, Nanjing  
Agricultural University, Nanjing 210095, China.

SOURCE: Jiangsu Journal of Agricultural Sciences, (1999)  
Vol. 15, No. 2, pp. 67-70. 8 ref.  
ISSN: 1000-4440

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

SUMMARY LANGUAGE: English

AB Water-soluble chitosan, a polymer of beta -1,4-D-glucosamine derived from  
crab-shell chitin, was sprayed on to rape (*Brassica napus*) and  
**winter wheat** (*Triticum aestivum*) leaves.

**Chitinase** (EC 3.2.1.14) activity was about 3 times higher in  
leaves of both **winter wheat** and rape treated with 0.2%  
(w/v) chitosan solution compared with that in controls (sprayed with  
TW-80). The peak of **chitinase** activity in rape and  
**winter wheat** appeared on the 2nd day and the 6th day,  
respectively, after spraying chitosan. Chitosan-induced **chitinase**  
showed endochitinase activity. **Chitinase** specific activity was  
much higher in the extract of leaf intercellular fluid than in leaf  
homogenates, and most of the chitosan-induced **chitinase** was  
located in the extracellular space. **Chitinase** from rape leaves  
could inhibit the growth of *Sclerotinia sclerotiorum* and lyse the cell  
wall of *S. sclerotiorum* forming oligosaccharides in vitro. It is  
concluded  
that chitosan-induced **chitinase** functions as a defensive enzyme  
against pathogenic fungi.

L6 ANSWER 13 OF 18 CAPLUS COPYRIGHT 2002 ACS

DUPLICATE 5

ACCESSION NUMBER: 1997:493839 CAPLUS

DOCUMENT NUMBER: 127:202905

TITLE: Antifreeze proteins in winter **rye**

AUTHOR(S): Griffith, Marilyn; Antikainen, Mervi; Hon, Wai-Ching;  
Pihakaski-Maunsbach, Kaarina; Yu, Xiao-Ming; Chun,  
Jong Un; Yang, Daniel S. C.

CORPORATE SOURCE: Dept of Biology, Univ. of Waterloo, Waterloo, ON, N2L  
3G1, Can.

SOURCE: Physiol. Plant. (1997), 100(2), 327-332

CODEN: PHPLAI; ISSN: 0031-9317

PUBLISHER: Munksgaard

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Six antifreeze proteins, which have the unique ability to adsorb onto the surface of ice and inhibit its growth, have been isolated from the apoplast of winter **rye** leaves where ice forms at subzero temps. The **rye** antifreeze proteins accumulate during cold acclimation and are similar to plant pathogenesis-related proteins, including two endoglucanase-like, two **chitinase**-like and two thaumatin-like proteins. Immunolocalization of the glucanase-like antifreeze proteins showed that they accumulate in mesophyll cell walls facing intercellular spaces, in pectinaceous regions between adjoining mesophyll cells,

in

the secondary cell walls of xylem vessels and in epidermal cell walls. Because the **rye** antifreeze proteins are located in areas where they could be in contact with ice, they may function as a barrier to the propagation of ice or to inhibit the recrystn. of ice. Antifreeze proteins similar to pathogenesis-related proteins were also found to accumulate in closely-related plants within the Triticum group but not in freezing-tolerant dicotyledonous plants. In **winter wheat**, the accumulation of antifreeze proteins and the development of freezing tolerance are regulated by chromosome 5. **Rye** antifreeze proteins may have evolved from pathogenesis-related proteins, but they retain their catalytic activities and may play a dual role in increasing both freezing and disease resistance in overwintering plants.